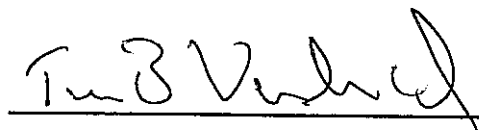


Report of Results: MVA5394
Analysis of Settled Dust
Northern California Youth Correctional Center

Prepared for:
State of California
Dept of General Services
Seismic & Special Programs
707 West 3rd St.
West Sacramento, CA 95605

Respectfully Submitted by:



Tim B. Vander Wood, Ph.D.
Executive Director

MVA Scientific Consultants
3300 Breckinridge Boulevard
Suite 400
Duluth, GA 30096

29 August 2007



Report of Results: MVA5394**Analysis of Settled Dust - Northern California Youth Correctional Center****Introduction**

On 1 August 2007, we received five settled dust samples from Clark Sief Clark, reportedly collected from the Northern California Youth Correctional Center, 7650 S. Newcastle, Stockton, California. We were asked to determine the asbestos levels in the dust and possible sources for the asbestos. Upon receipt, the samples were assigned MVA Scientific Consultants laboratory identification numbers as follows:

<u>Sample ID</u>	<u>Sample Description</u>	<u>MVA Number</u>
37VA	Hospital Electrical Rm Transformer- Top Surface	S0939
38VA	Hospital Hallway @ pharmacy return air plenum- Top of light case	S0940
39VA	Auditorium-Stage-OHC Table surface	S0941
40VA	Administration-OHC-Hallway-GIC office -ceiling hatch surface	S0942
41VA	Administration-OHC-Hallway-Janitor's closet -ceiling hatch surface	S0943

All analyses were carried out in our laboratory during the period 1 August through 27 August 2007.

Methods

The samples were analyzed according to ASTM Method D5755-03 using either a Philips model EM420 or a Philips model CM120 transmission electron microscope (TEM), equipped with an Oxford INCA energy dispersive x-ray spectrometer (EDS). Additional analyses for dust constituents that may serve as source indicators were also conducted by TEM/EDS.

Results and Discussion

The results of analysis for these samples are presented in Table 1. The Appendix contains a summary of the analytical results, the laboratory count sheets, and images and EDS spectra of typical asbestos fibers found in these samples. Also contained in the appendix are images and spectra showing vermiculite associated with chrysotile fibers and other asbestiform amphibole minerals typical of those known as "Libby



amphibole" and observed as contaminants in vermiculite from the Libby, Montana vermiculite mine operated by W.R. Grace.

Conclusions

Dust analyzed in this study contains elevated levels of chrysotile asbestos. Portions of the dust are consistent with derivation from a chrysotile/vermiculite bearing fireproofing. Asbestiform amphibole consistent with "Libby amphibole" was also found, indicating that the vermiculite in this dust originated at least in part at W.R. Grace's Libby vermiculite mine.

Table 1. Asbestos Concentration in Settled Dust Samples

Sample ID	MVA Number	Asbestos Str/cm ²
37VA	S0939	14,513,778
38VA	S0940	502,400
39VA	S0941	None Detected
40VA	S0942	<8,373
41VA	S0943	19,538





Requested TAT (Circle One)	Same Day	One Day (24hr)	Normal (48hr)
Analysis Type (Circle One)	Alr	Surface	Bulk Water

Requested TAT (Circle One)	Same Day	One Day (24hr)	Normal (48hr)
Analysis Type (Circle One)	Alr	Surface	Bulk Water

5765	5	7.26.07	of
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Northern California Youth Corrections Center	DGS
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Stocks	
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#	Date	Start Flow Rate	Start Time	Total	Type of

Hospital Electrical Km

A
 100% split - 50% each - C. P. 100% each
 retention air 0/100% - Top 0/100% each

Table Surface

Admini'stration - 0116

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

[illegible][illegible][illegible]

Received By (Print & Sign)	Date & Time	Received By (Print & Sign)	Date & Time	Analysis By (Print & Sign)

Received By (Print & Sign)	Date & Time	Received By (Print & Sign)	Date & Time	Analysis Date & Time

Clark Seif Clark- 21732 Devonshire Street, 2nd Floor, Chatsworth, CA 91311, Ph (818) 727-2553, Fax (818) 727-2556

APPENDIX



ASTM D5755 Results**MVA 5394**

By: W.Hill

Client project number:

Str/cm = No Str. X CFA X Total Vol.

Grid Op. X GO Area X Vol Filt X Area Sampled

MVA #: S0939 Client #: 37.VA

Str. #	CFA	#GO	Area GO	Vol Filt ml	Total Vol.	Area Samp.
52	1256	5	0.009	0.1	100	100

Anal. Sens = 279111.111 Str/CM2 LOD =3* Anal. Sens = 837333.333

Total = 14513777.778 Str/CM2

MVA #: S0940 Client #: 38.VA

Str. #	CFA	#GO	Area GO	Vol Filt ml	Total Vol.	Area Samp.
36	1256	10	0.009	1	100	100

Anal. Sens = 13955.556 Str/CM2 LOD =3* Anal. Sens = 41866.667

Total = 502400.000 Str/CM2

MVA #: S0941 Client #: 39.VA

Str. #	CFA	#GO	Area GO	Vol Filt ml	Total Vol.	Area Samp.
0	1256	10	0.009	5	100	100

Anal. Sens = 2791.111 Str/CM2 LOD =3* Anal. Sens = 8373.333

Total = 0.000 Str/CM2

MVA #: S0942 Client #: 40.VA

Str. #	CFA	#GO	Area GO	Vol Filt ml	Total Vol.	Area Samp.
3	1256	10	0.009	5	100	100

Anal. Sens = 2791.111 Str/CM2 LOD =3* Anal. Sens = 8373.333

Total = 8373.333 Str/CM2

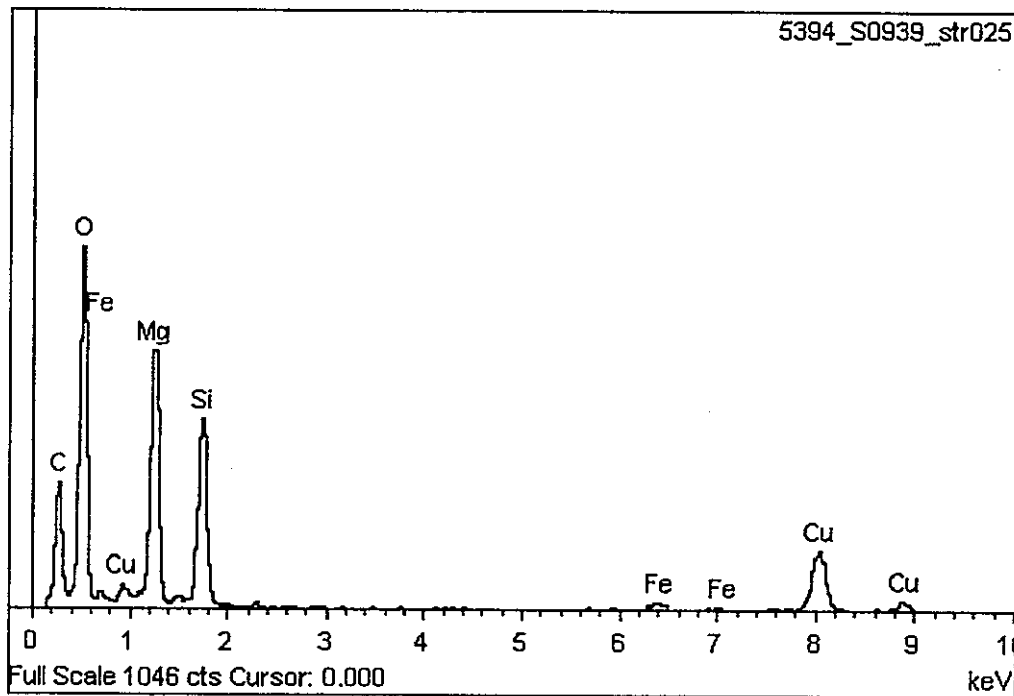
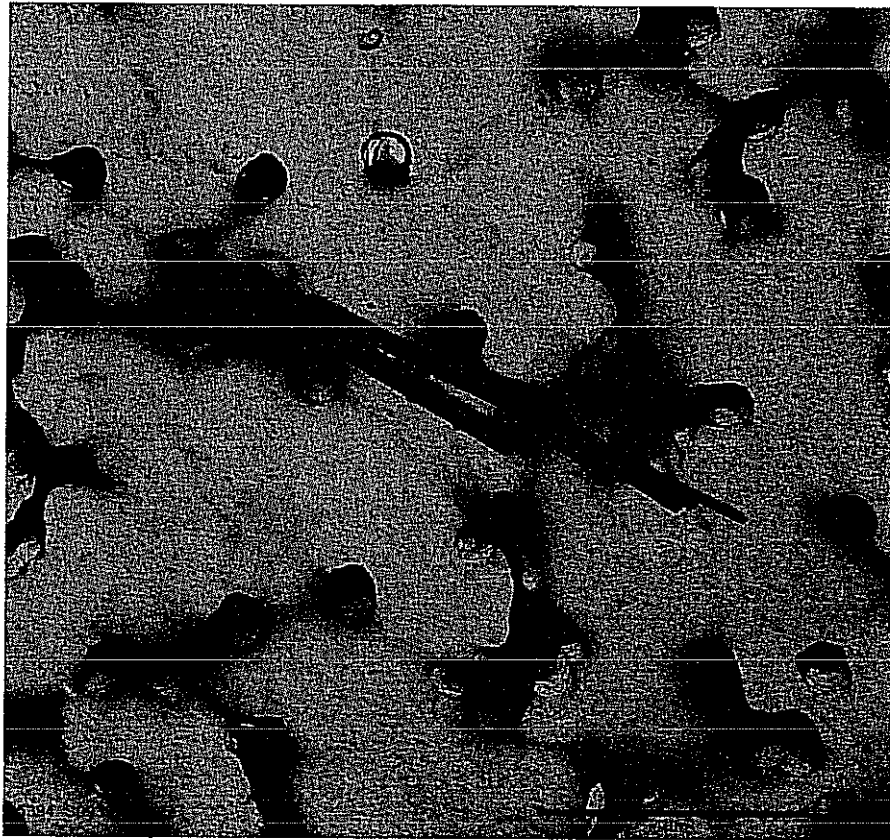
MVA #: S0943 Client #: 41.VA

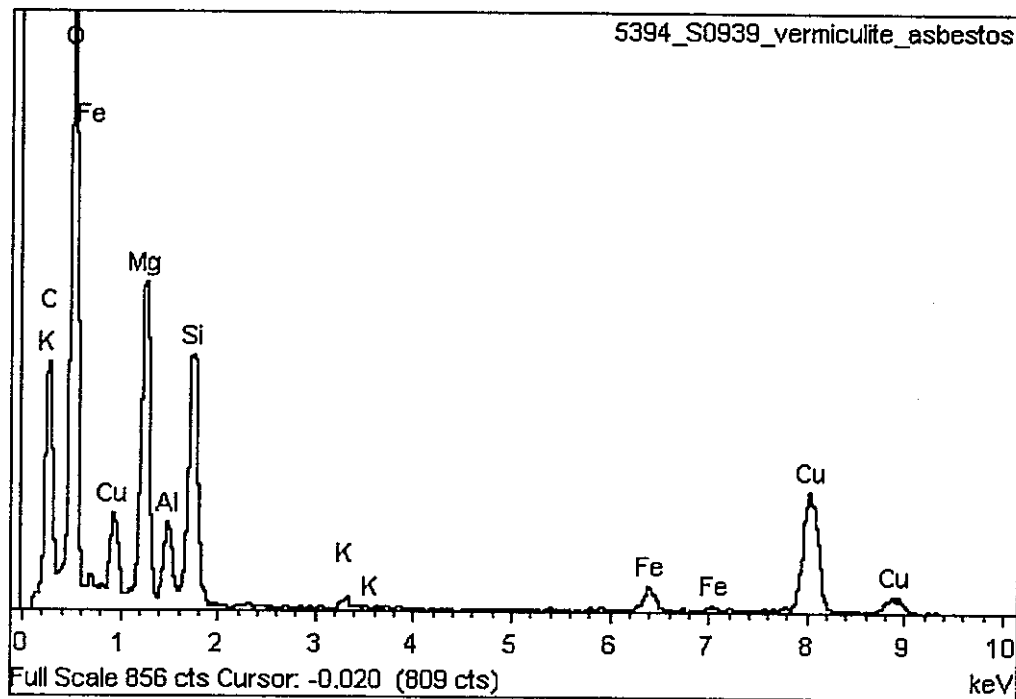
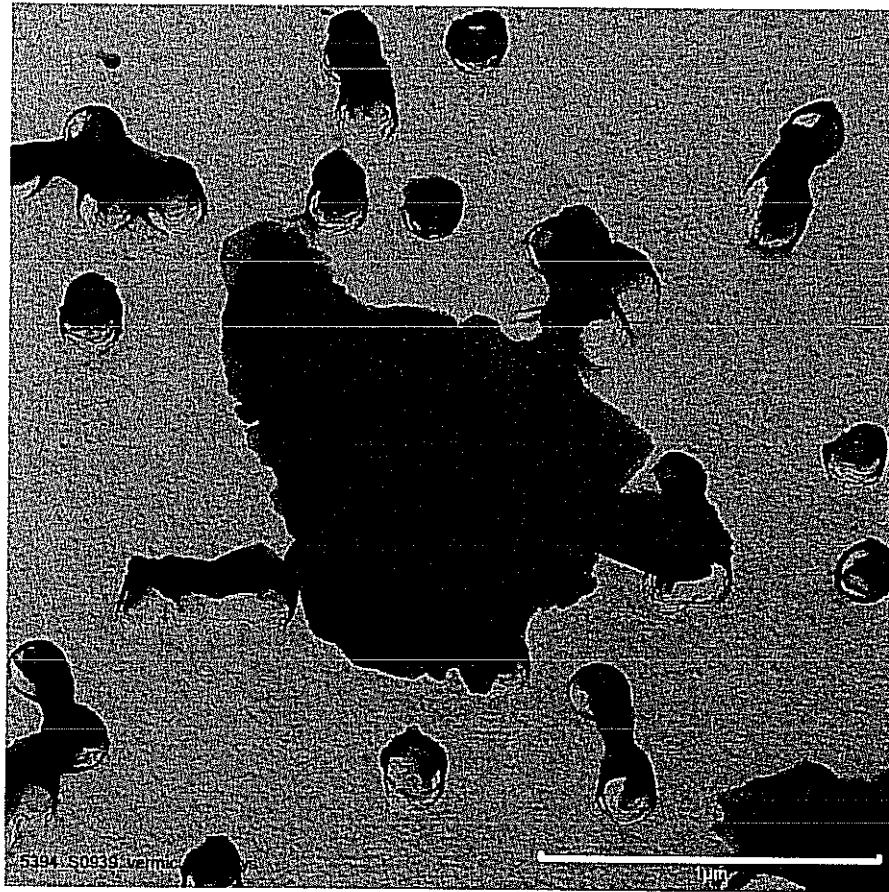
Str. #	CFA	#GO	Area GO	Vol Filt ml	Total Vol.	Area Samp.
7	1256	10	0.009	5	100	100

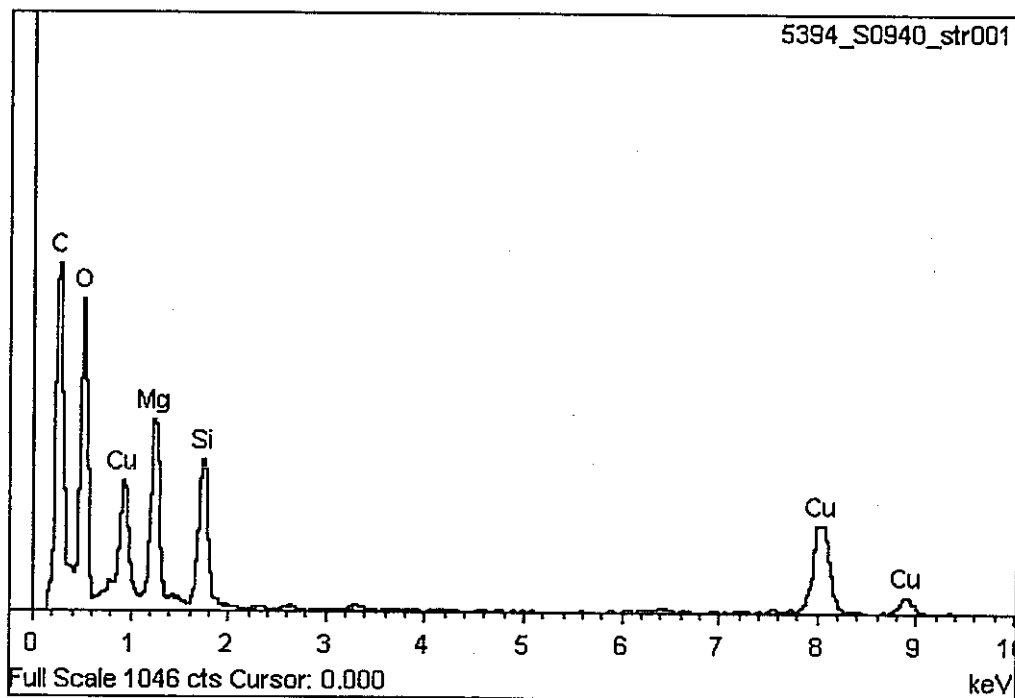
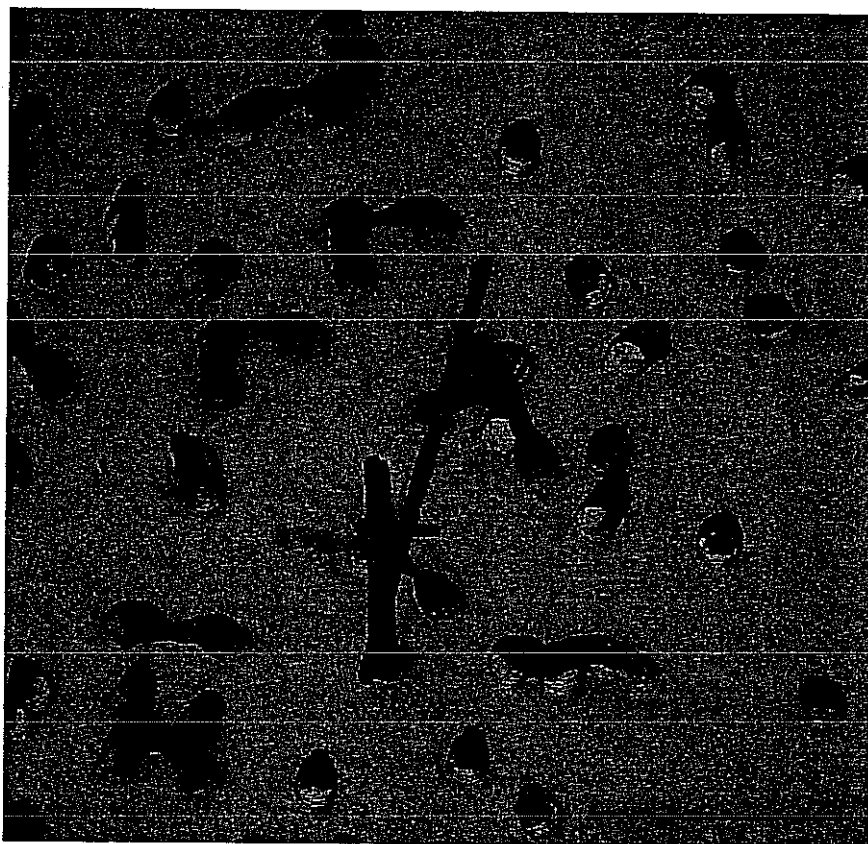
Anal. Sens = 2791.111 Str/CM2 LOD =3* Anal. Sens = 8373.333

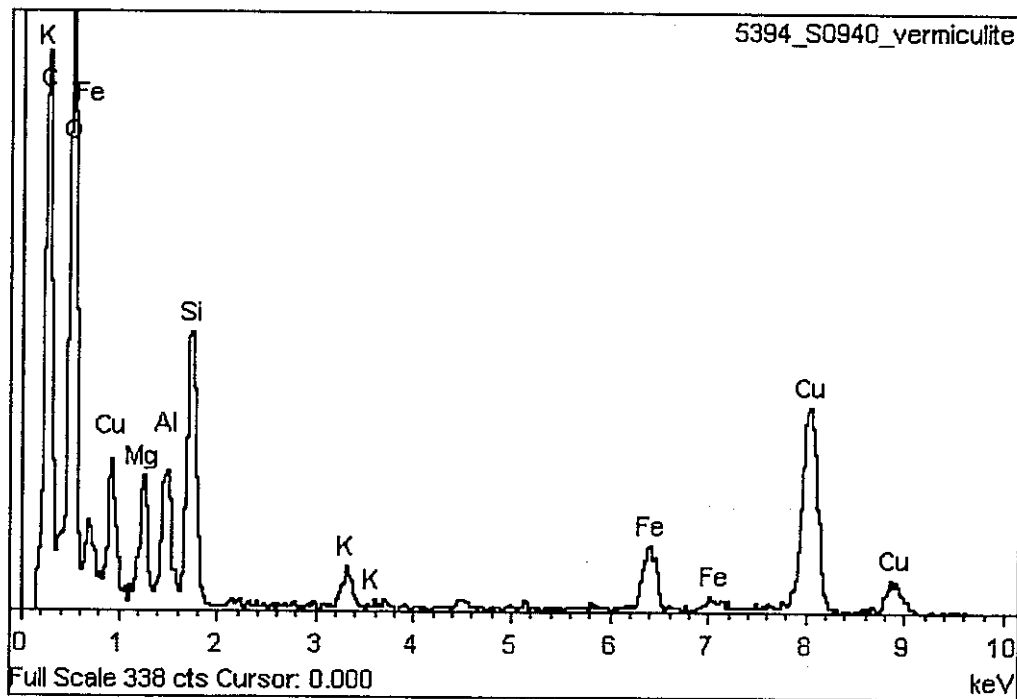
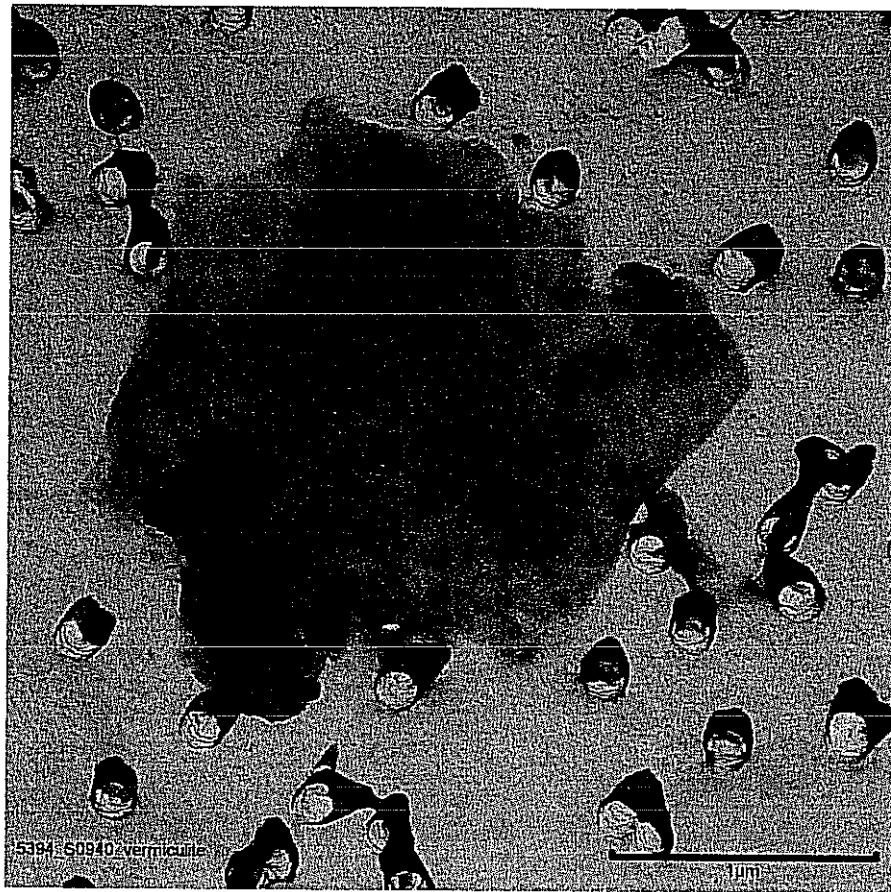
Total = 19537.778 Str/CM2

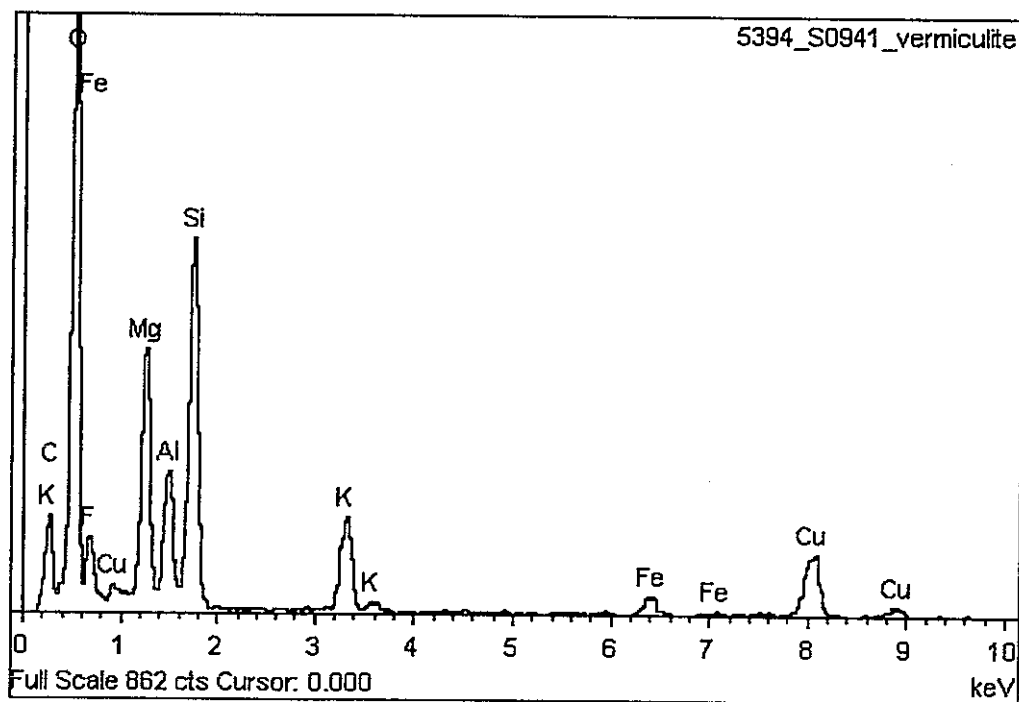
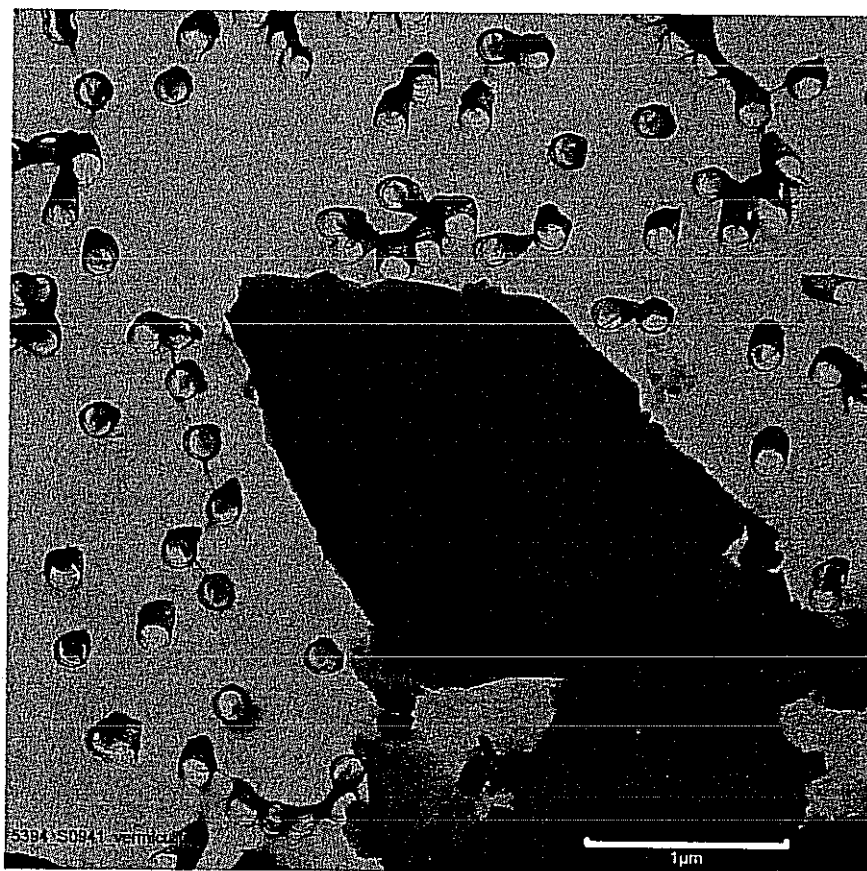
**According to ASTM D6620*

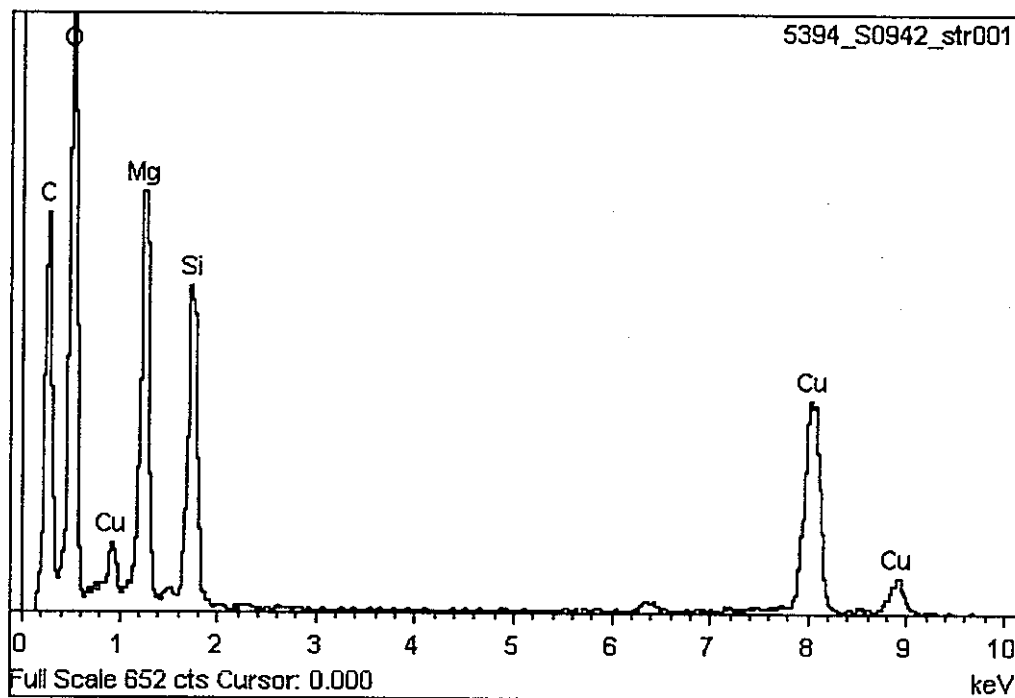
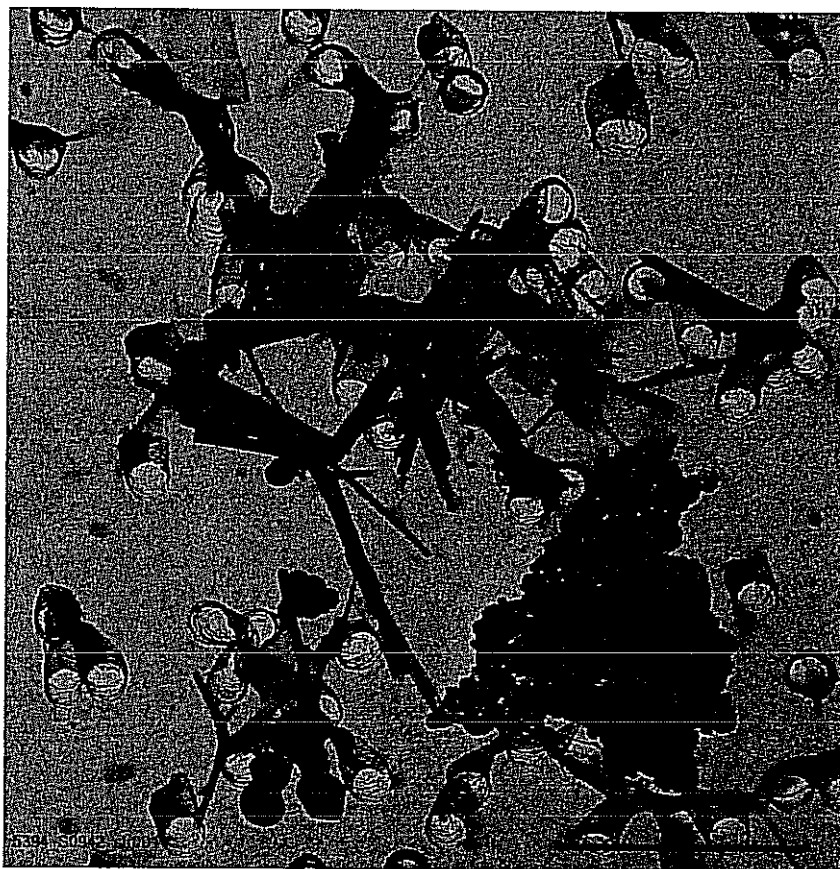


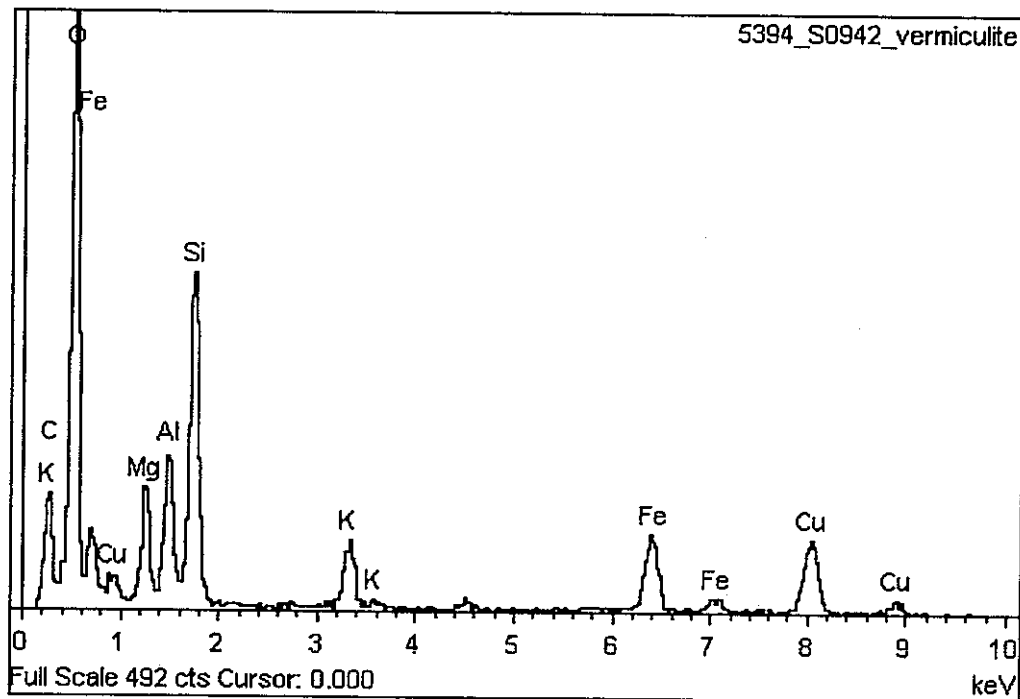


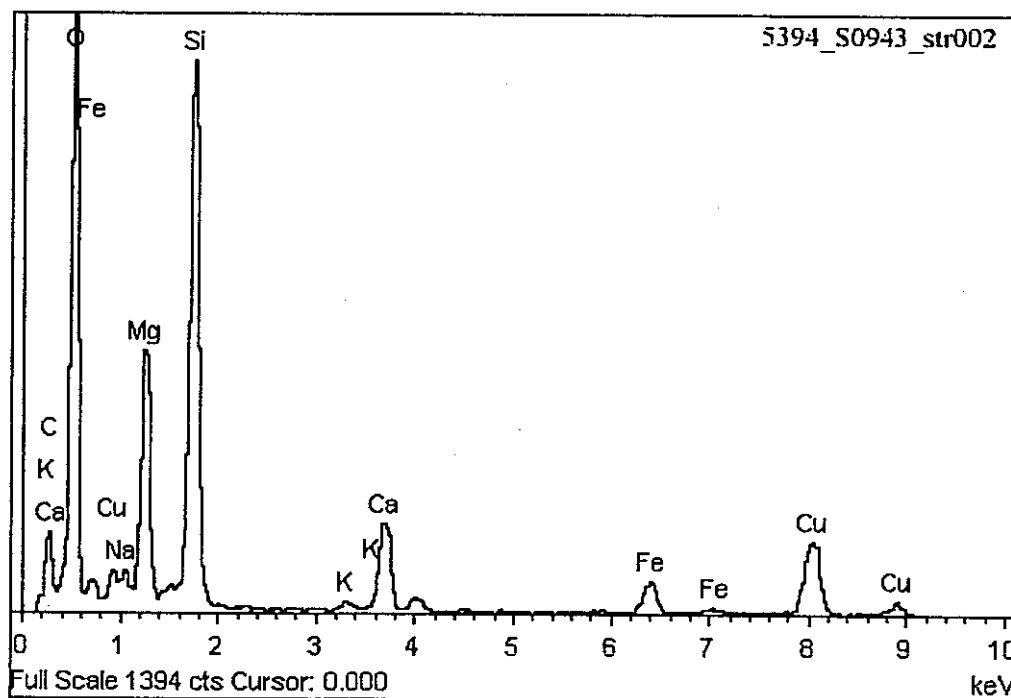
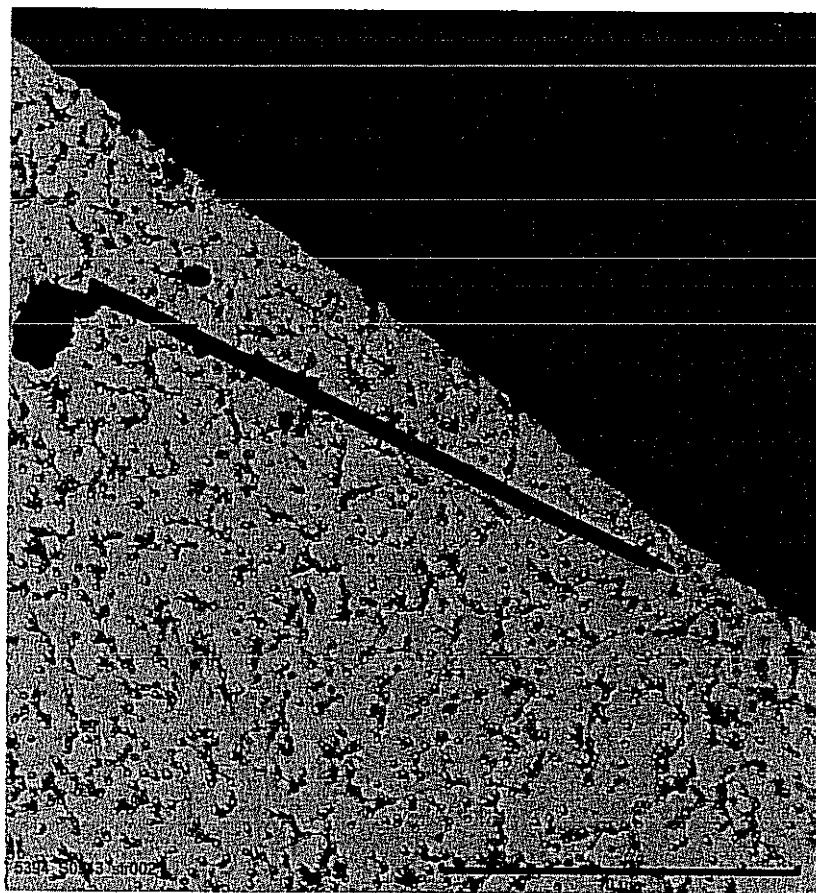


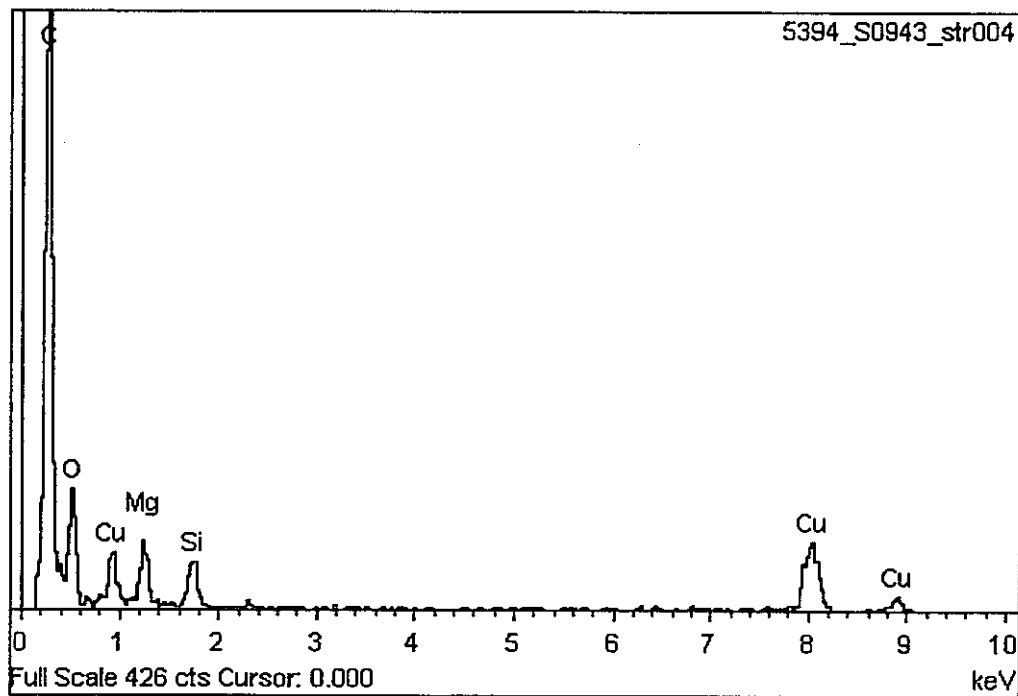
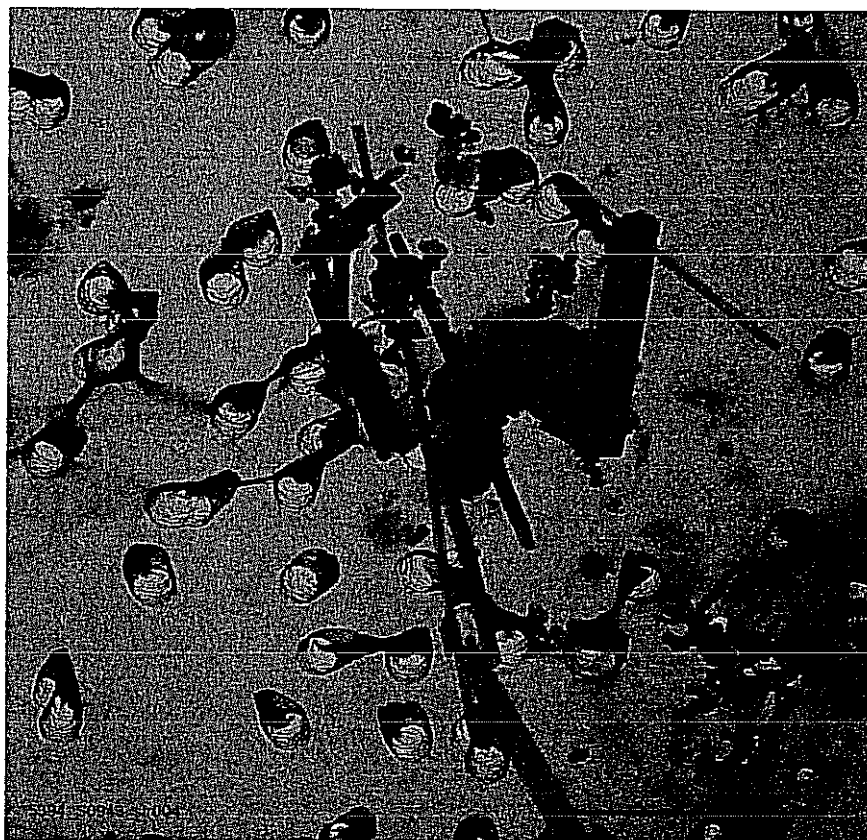


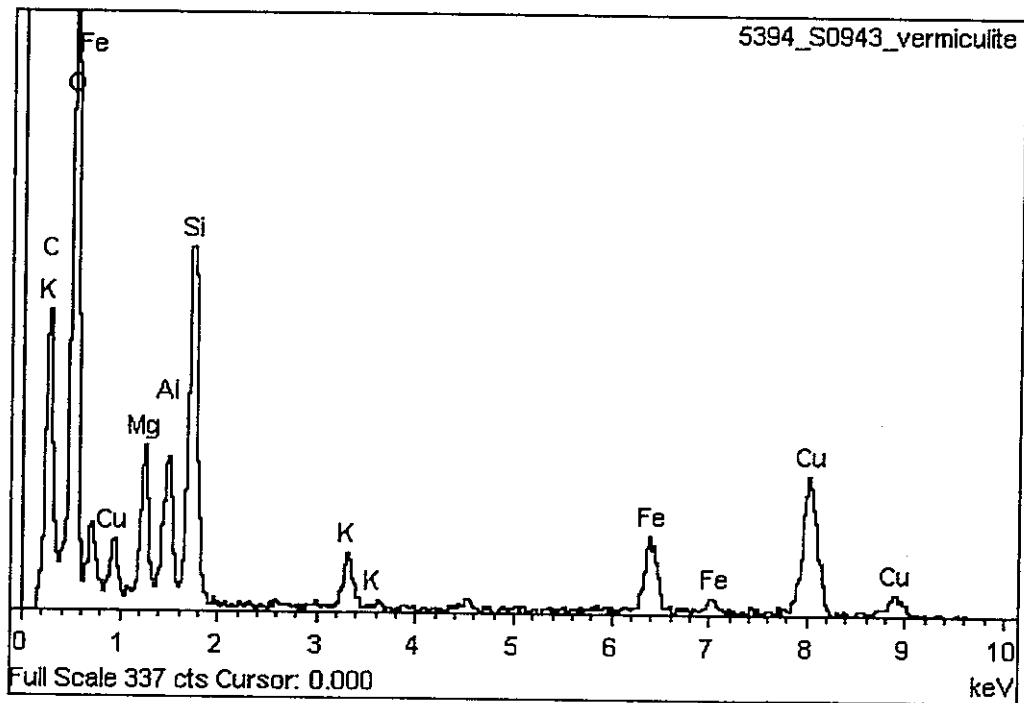
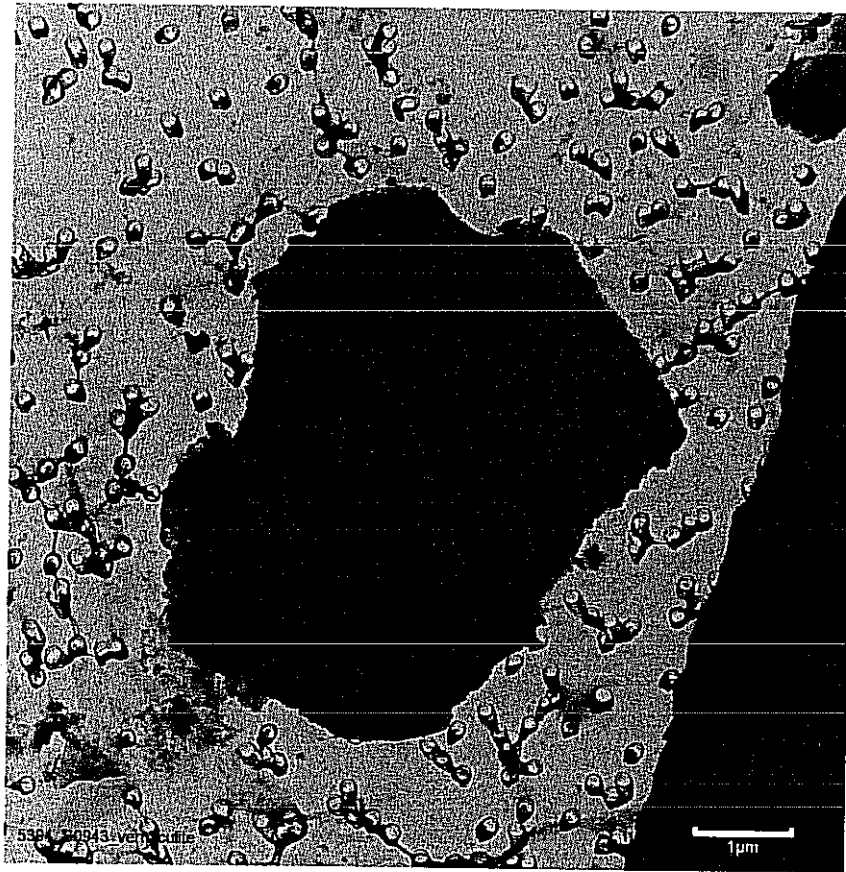












MVA SCIENTIFIC CONSULTANTS

Surface Dust Sample Analysis Sheet

MVA Project#	5394	Amt Collected(cm ²):	100
MVA Sample#	S0939	Amt Prepped(cm ²):	0.1
Client I.D.:	37VA	Filter Area (mm ²):	1256
Instrument:	Philips 120	Filter Type:	PC
Magnification:	24,000	Openings Analyzed:	5
Acc. Voltage:	100	Grid Opening (mm ²):	0.009

Analyst: WH

Date: 8/27/2007

Page: 1 of 2

Comments: 0.1 ml

ASTM Method: D6480

or D5755 X

Grid	Opening	Structure Number*	Structure Type	Length** (cm)	Width** (cm)	SAED	EDS	Comments	Length*** (µm)	Width*** (µm)
1	B7	1	B	26	0.3	C			10.8	0.13
		2	F	7.0	0.1	C			2.9	0.04
		3	F	11.5	0.1	C			4.8	0.04
		4	F	7.0	0.15	C			2.9	0.06
		5	F	11.5	0.1	C			4.8	0.04
		6	F	4.0	0.1	C			1.7	0.04
		7	B	3.5	0.5	C			1.5	0.21
		8	F	7.0	0.1	C			2.9	0.04
		9	F	9.5	0.1	C			4.0	0.04
		10	F	5.5	0.1	C			2.3	0.04
		11	F	6.5	0.2	C			2.7	0.08
		12	B	5.0	0.5	C			2.1	0.21
	C9	13	F	10.1	0.1	C			4.2	0.04
		14	F	2.3	0.1	C			1.0	0.04
		15	F	17.0	0.1	C			7.1	0.04
		16	F	5.4	0.1	C			2.3	0.04
		17	F	5.4	0.1	C			2.3	0.04
		18	F	4.5	0.1	C			1.9	0.04
		19	C	5.5	1.5	C			2.3	0.63
		20	F	2.1	0.1	C			0.9	0.04
		21	B	9.0	1	C			3.8	0.42
		22	F	19.0	0.15	C			7.9	0.06
	E8	23	F	9.0	0.1	C			3.8	0.04
		24	B	3.5	0.15	C			1.5	0.06
		25	B	5.5	0.5	C	C	PHOTO	2.3	0.21
		26	F	6.0	0.1	C			2.5	0.04
		27	F	2.5	0.1	C			1.0	0.04
		28	F	16.0	0.1	C			6.7	0.04
		29	B	3.0	0.5	C			1.3	0.21
		30	F	5.5	0.1	C			2.3	0.04
		31	F	36.0	0.1	C			15.0	0.04
		32	F	5.5	0.1	C			2.3	0.04
		33	B	41.0	0.4	C			17.1	0.17
		34	F	27.0	0.1	C			11.3	0.04
	H7	35	F	36.0	0.1	C			15.0	0.04

*NFD or NSD = No Fibers Detected or No Structures Detected

** On Screen Measurement

*** Calculated Actual Measurement (On Screen Measurement X 10,000/Magnification)

Structure Type: B = Bundle, C = Cluster, F = Fiber, M = Matrix

SAED: C = Chrysotile, A = Amphibole

EDS: C = Chrysotile, AM = Amosite, CR = Crocidolite, AC = Actinolite, AN = Anthophyllite, TR = Tremolite, N = Non Asbestos

Amt Collected(cm^2): 100

or D5755 X

EDS: C = Chrysotile, AM = Amosite, CR = Crocidolite, AC = Actinolite, AN = Anthophyllite, TR = Tremolite, N = Non Asbestos

Surface Dust Sample Analysis Sheet

MVA Project#	5394	Amt Collected(cm ²):	100
MVA Sample#	S0940	Amt Prepped(cm ²):	1
Client I.D.:	38VA	Filter Area (mm ²):	1256
Instrument:	Philips 120	Filter Type:	PC
Magnification:	24,000	Openings Analyzed:	10
Acc. Voltage:	100	Grid Opening (mm ²):	0.009

Analyst: WH

Date: 8/27/2007

Page: 1 of 2

Comments: 1 ml

ASTM Method: D6480

or D5755

X

Grid	Opening	Structure Number*	Structure Type	Length** (cm)	Width** (cm)	SAED	EDS	Comments	Length*** (µm)	Width*** (µm)
1	B4	1	F	4	0.1	C	C	PHOTO	1.7	0.04
		2	F	2.0	0.1	C			0.8	0.04
	D1	3	B	8.0	1.5	C			3.3	0.63
		4	F	7.0	0.25	C			2.9	0.10
	E4	5	M	2.5	0.15	C			1.0	0.06
		6	F	7.5	0.2	C			3.1	0.08
	H2	7	M	3.1	0.1	C			1.3	0.04
		8	F	5.0	0.1	C			2.1	0.04
		9	B	4.5	0.5	C			1.9	0.21
		10	F	2.1	0.15	C			0.9	0.06
		11	F	21.0	0.1	C			8.8	0.04
		12	B	81.0	1.5	C			33.8	0.63
		13	F	4.6	0.1	C			1.9	0.04
	I4	14	M	5.5	0.1	C			2.3	0.04
		15	F	4.5	0.1	C			1.9	0.04
		16	F	6.0	0.1	C			2.5	0.04
		17	M	7.0	0.1	C			2.9	0.04
2	C3	18	F	2.5	0.1	C			1.0	0.04
		19	F	6.0	0.1	C			2.5	0.04
		20	F	2.0	0.1	C			0.8	0.04
		21	F	4.5	0.1	C			1.9	0.04
	D1	22	F	1.8	0.1	C			0.8	0.04
		23	F	2.0	0.1	C			0.8	0.04
	E7	24	B	9.5	0.3	C			4.0	0.13
		25	B	2.2	0.2	C	C		0.9	0.08
		26	F	5.0	0.1	C			2.1	0.04
		27	F	6.0	0.1	C			2.5	0.04
		28	C	5.0	1	C			2.1	0.42
	F9	29	M	5.5	0.5	C			2.3	0.21
		30	F	2.9	0.15	C			1.2	0.06
		31	M	3.5	0.1	C			1.5	0.04
	H8	32	F	6.0	0.1	C			2.5	0.04
		33	F	3.5	0.1	C			1.5	0.04
		34	C	7.0	1.5	C			2.9	0.63
		35	F	5.4	0.1	C			2.3	0.04

*NFD or NSD = No Fibers Detected or No Structures Detected

** On Screen Measurement

*** Calculated Actual Measurement (On Screen Measurement X 10,000/Magnification)

Structure Type: B = Bundle, C = Cluster, F = Fiber, M = Matrix

SAED: C = Chrysotile, A = Amphibole

EDS: C = Chrysotile, AM = Amosite, CR = Crocidolite, AC = Actinolite, AN = Anthophyllite, TR = Tremolite, N = Non Asbestos

Surface Dust Sample Analysis Sheet

MVA Project#	5394	Amt Collected(cm ²):	100
MVA Sample#	S0940	Amt Prepped(cm ²):	1
Client I.D.:	38VA	Filter Area (mm ²):	1256
Instrument:	Philips 120	Filter Type:	PC
Magnification:	24,000	Openings Analyzed:	10
Acc. Voltage:	100	Grid Opening (mm ²):	0.009

Analyst: WH

Date: 8/27/2007

Page: 2 of 2

Comments: 1 ml

ASTM Method: D6480

or D5755 X

[illegible]

*NFD or NSD = No Fibers Detected or No Structures Detected

**** On Screen Measurement**

*** Calculated Actual Measurement (On Screen Measurement X 10,000/Magnification)

Structure Type: B = Bundle, C = Cluster, F = Fiber, M = Matrix

SAED: C = Chrysotile, A = Amphibole

EDS: C = Chrysotile, AM = Amosite, CR = Crocidolite, AC = Actinolite, AN = Anthophyllite, TR = Tremolite, N = Non Asbestos

Amt Collected(cm^2): 100

Amt Collected(cm^2): 100

Amt Prepped(cm^2): 5

Filter Area (mm²): 1256

Filter Type: PC

Openings Analyzed: 10

Grid Opening (mm²): 0.009

Date: 8/27/2007

Comments: 5.0 ml

ASTM Method: D6480

or D5755 X

** On Screen Measurement

Structure Type: B = Bundle, C = Cluster, F = Fiber, M = Matrix

EDS: C = Chrysotile, AM = Amosite, CR = Crocidolite, AC = Actinolite, AN = Anthophyllite, TR = Tremolite, N = Non Asbestos

Amt Collected(cm^2): 100

Analyst: WH
Date: 8/27/2007
Page: 1 of 1
Comments: 5 ml
ASTM Method: D6480
or D5755 X

EDS: C = Chrysotile, AM = Amosite, CR = Crocidolite, AC = Actinolite, AN = Anthophyllite, TR = Tremolite, N = Non Asbestos